

Lighting Fundamentals Course Outline

Module 1: Basic Lighting Concepts, Vision, and Color

Upon completion of Module 1, students will:

- Understand and appreciate both the aesthetic and functional aspects of lighting;
- Appreciate the history of light and lighting, with special emphasis on technology and energy efficiency;
- Understand and be able to use basic lighting terminology; and
- Comprehend the relationships among light, vision and color

Module 2: Electric Light Sources and Ballasts

Upon completion of Module 2, students will:

- Understand the basic operation and performance characteristics of electric light sources;
- Understand how ballasted light sources operate as a system; and
- Be able to identify commonly used electric light sources and understand where and how they are applied.

Module 3: Luminaires and Controls

Upon completion of Module 3, students will:

- Identify and recognize the various types of luminaires offered today, by mounting type, by light source, and by application
- Understand the various types of lighting controls available today, how they work, and why they are important.

Module 4: Photometry and Calculations

Upon completion of Module 4, students will:

- Understand how to read the photometric reports in luminaire manufacturer catalogs; and
- Use the photometric information to calculate average illuminance (the lumen method) and illuminance at a point.

Module 5: Lighting for Interiors

Upon completion of Module 5, students will:

- Appreciate the complexities involved in designing lighting for residential and commercial spaces; and
- Understand the objective and subjective aspects of lighting for interior spaces.

Module 6: Lighting for Exteriors

Upon completion of Module 6, students will:

- Understand the multiple issues involved in designing lighting for exteriors, including glare, light trespass, safety and security; and
- Know that there are many types of exterior lighting applications, each with their own unique design considerations.

Module 7: Important Issues in Lighting

Upon completion of Module 7, students will:

- Have a general understanding of five key lighting issues facing designers, specifiers, contractors, manufacturers, and end users, including sustainability, daylighting, lighting economics, codes and standards, and light and health; and
- Be prepared for advanced topics in lighting.